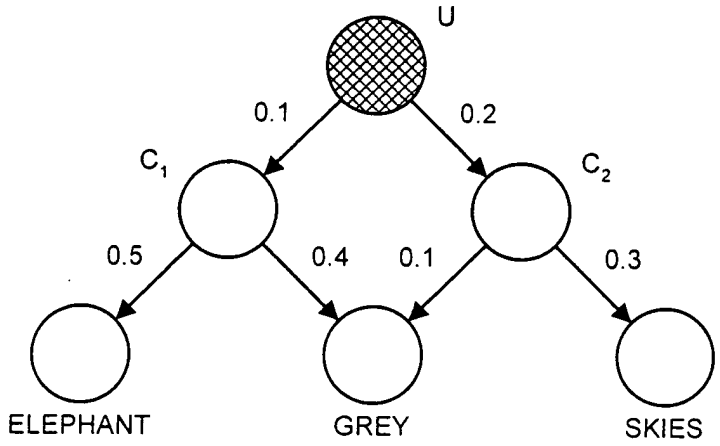

FIG. 1

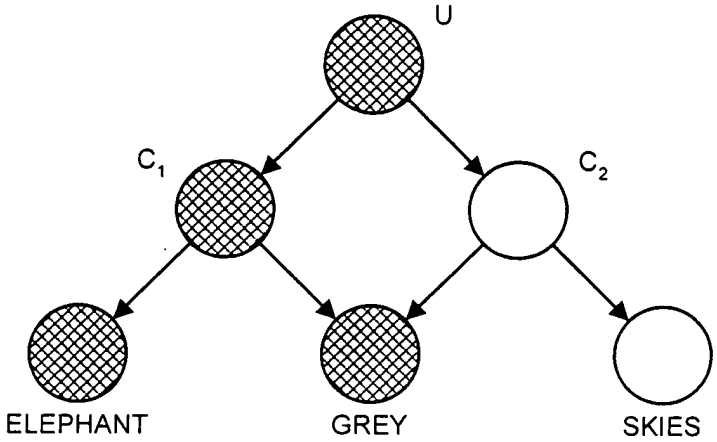

FIG. 2

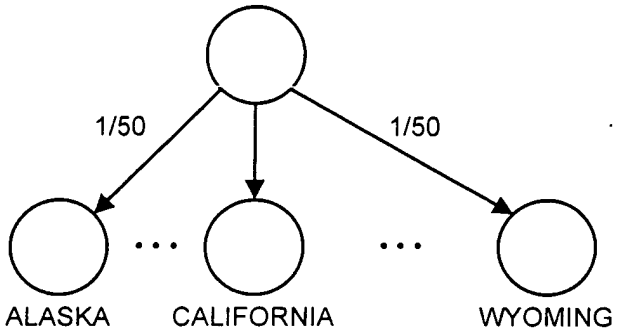

FIG. 3

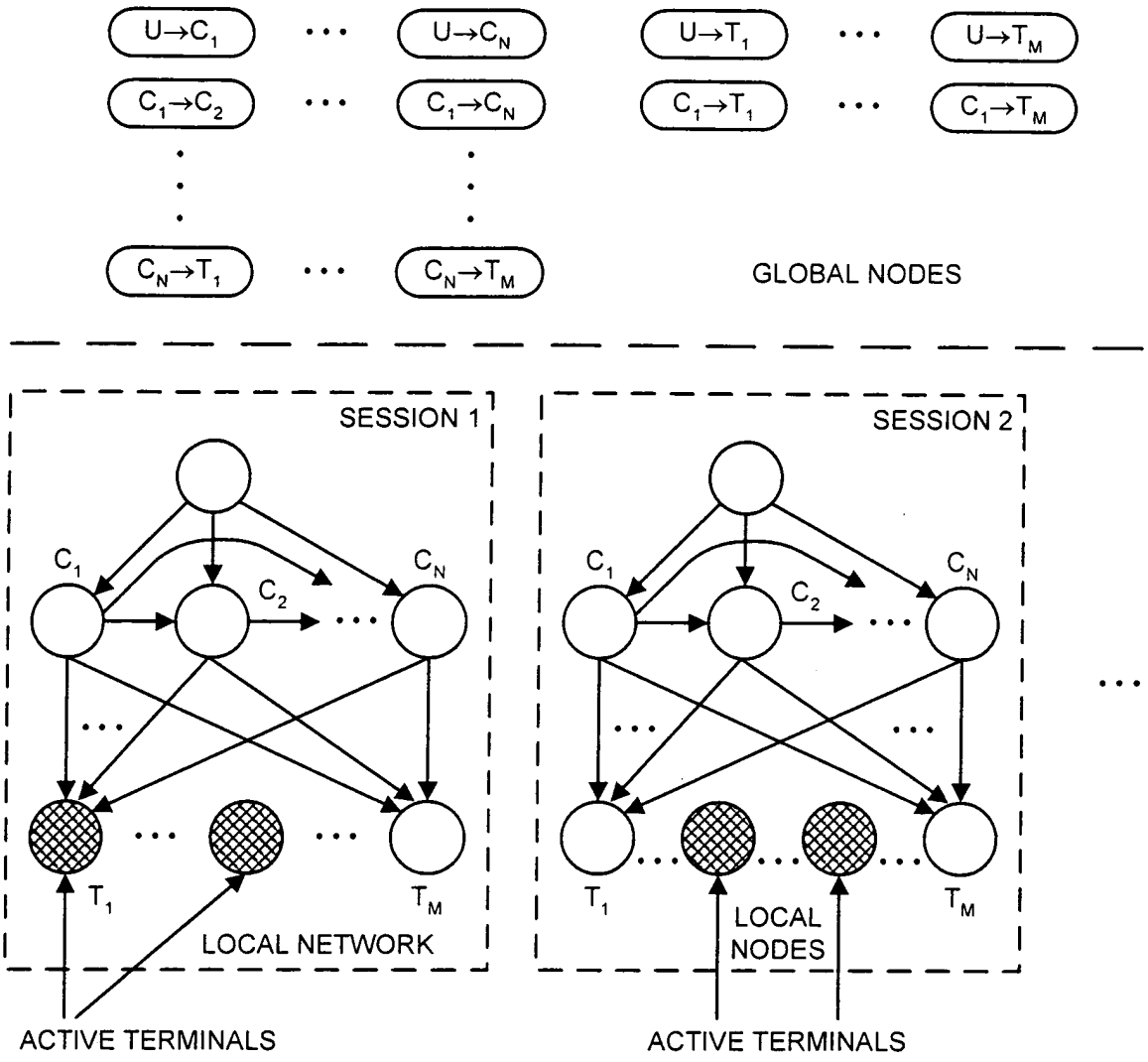
U→C1
U→CN
U→T1
U→TM
C1→C2
C1→CN
C1→T1
C1→TM
CN→T1
CN→TM
GLOBAL NODES
SESSION 1
SESSION 2
C1
C2
CN
T1
TM
LOCAL NETWORK
LOCAL NODES
ACTIVE TERMINALS
ACTIVE TERMINALS

FIG. 4

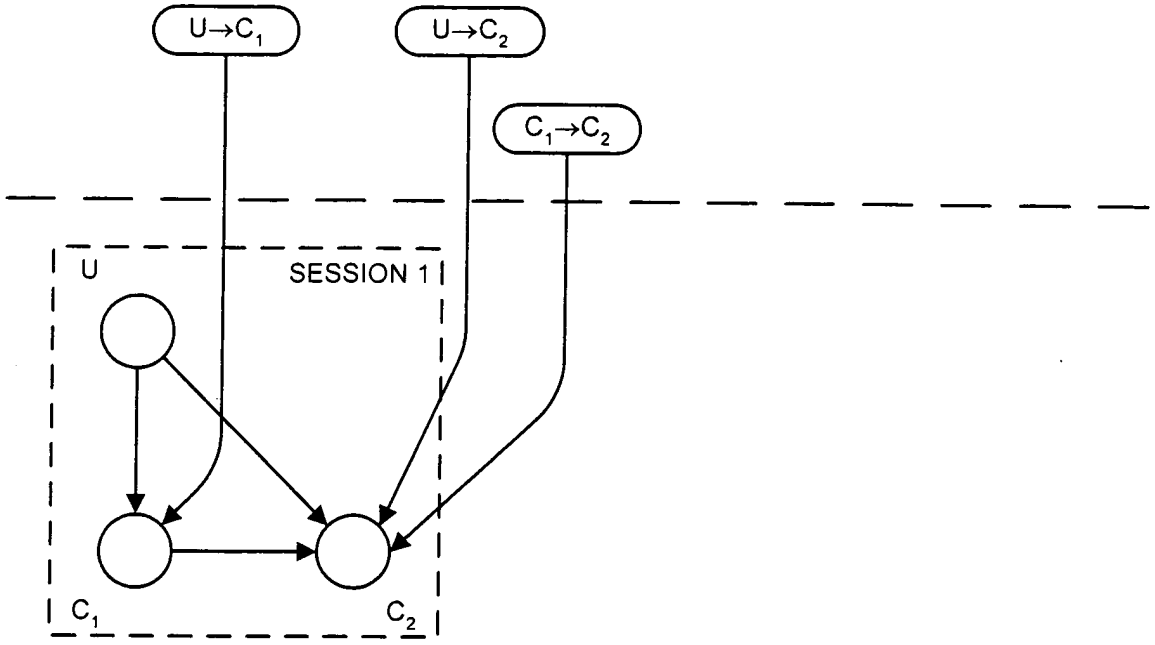

FIG. 5

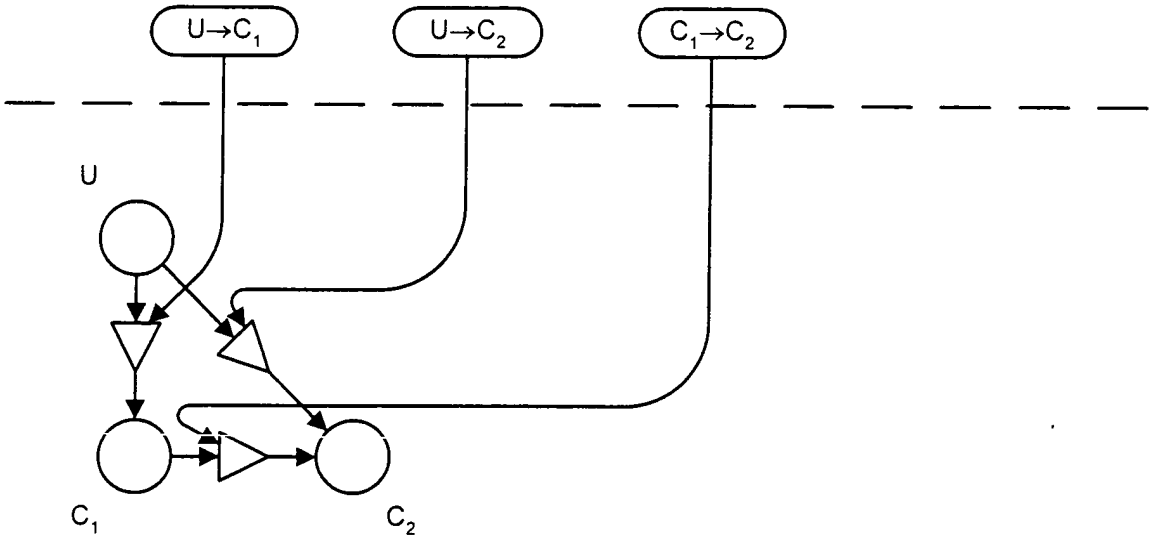

FIG. 6

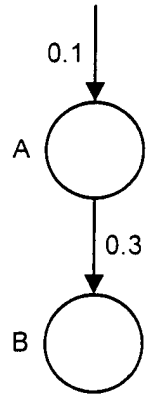

FIG. 7A

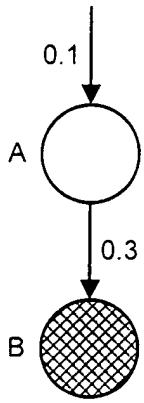

FIG. 7B

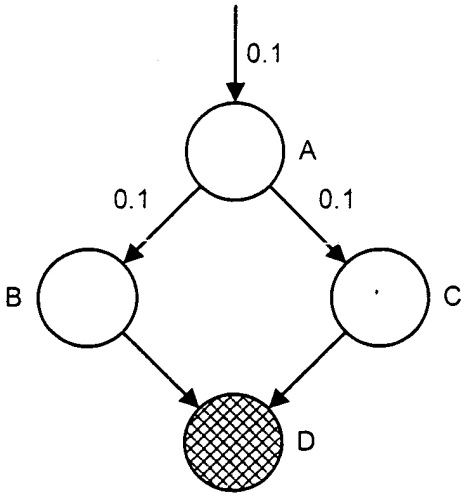

FIG. 8

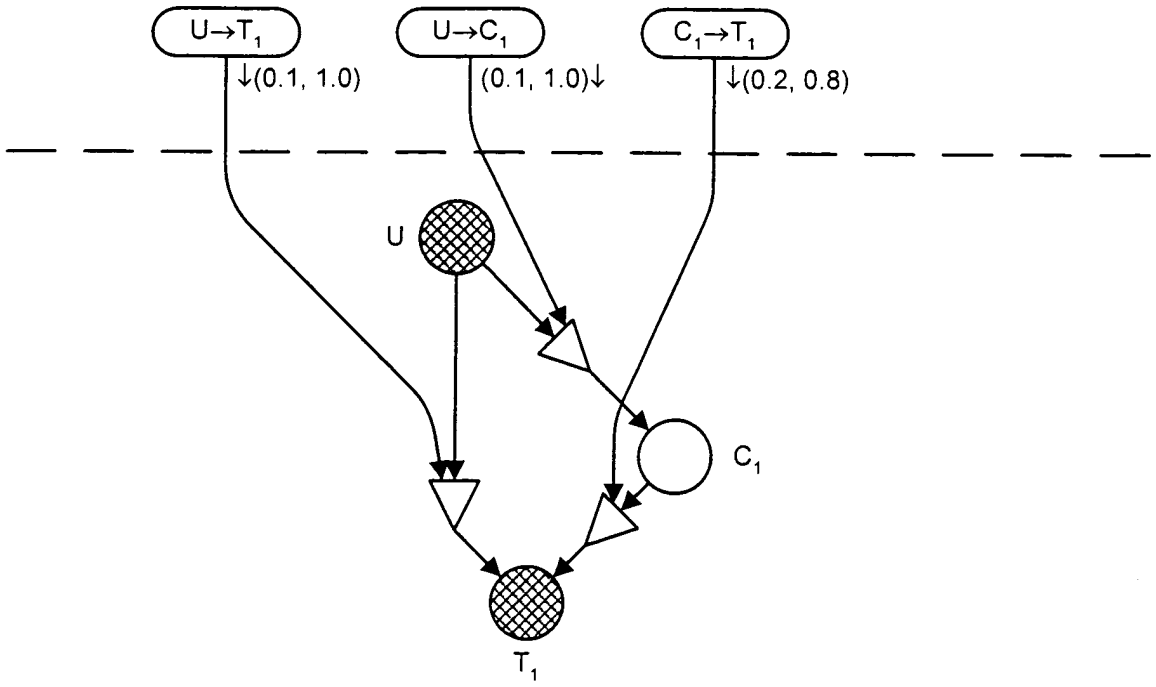

FIG. 9

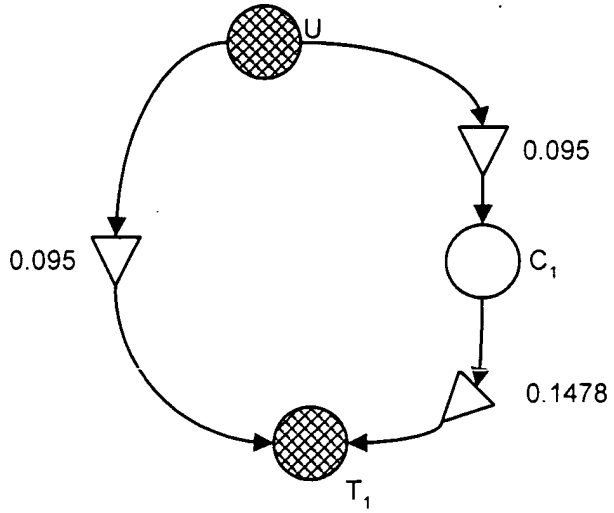

FIG. 10

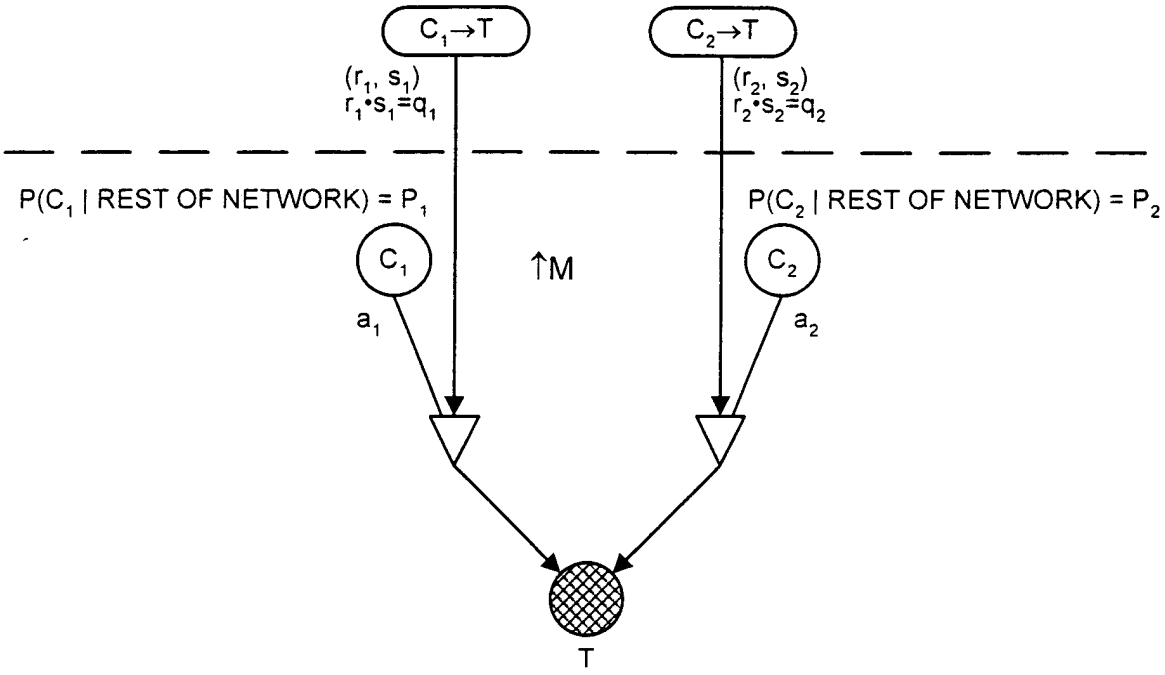
C1→T
C2→T
(r1, s1)
r1•s1=q1
(r2, s2)
r2•s2=q2
P(C1 | REST OF NETWORK) = P1
P(C2 | REST OF NETWORK) = P2
C1
C2
↑M
a1
a2
T

FIG. 11

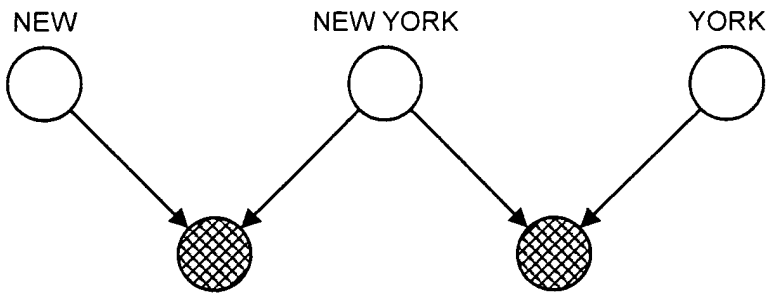
NEW
NEW YORK
YORK

FIG. 12

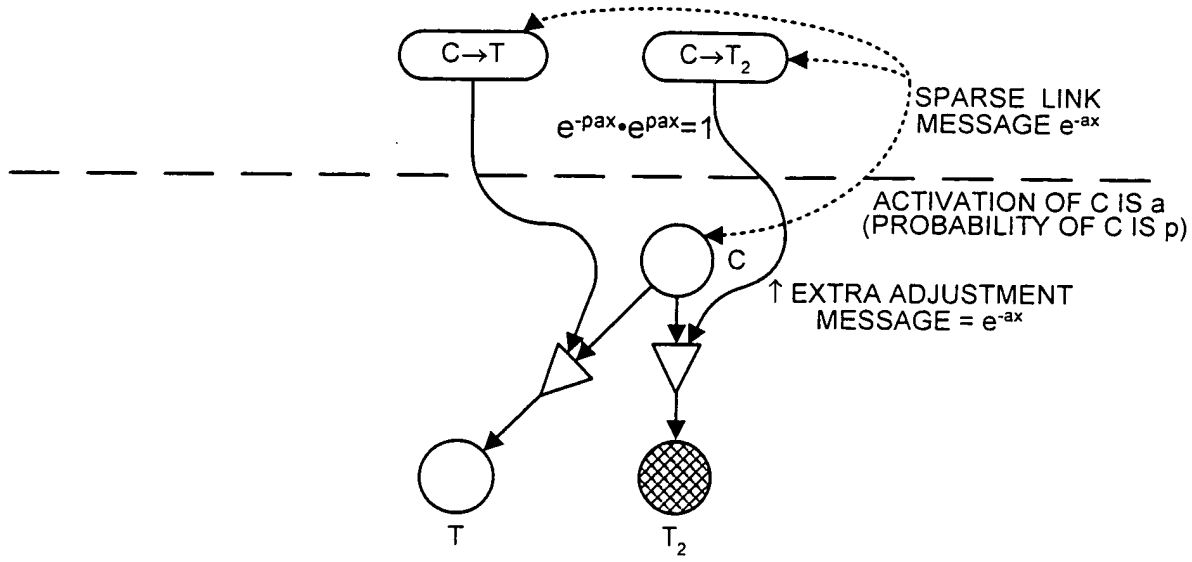
C→T
C→T2
SPARSE LINK
MESSAGE e-ax
e-pax•epax=1
ACTIVATION OF C IS a
(PROBABILITY OF C IS p)
C
↑ EXTRA ADJUSTMENT
MESSAGE = e-ax
T
T2

FIG. 13

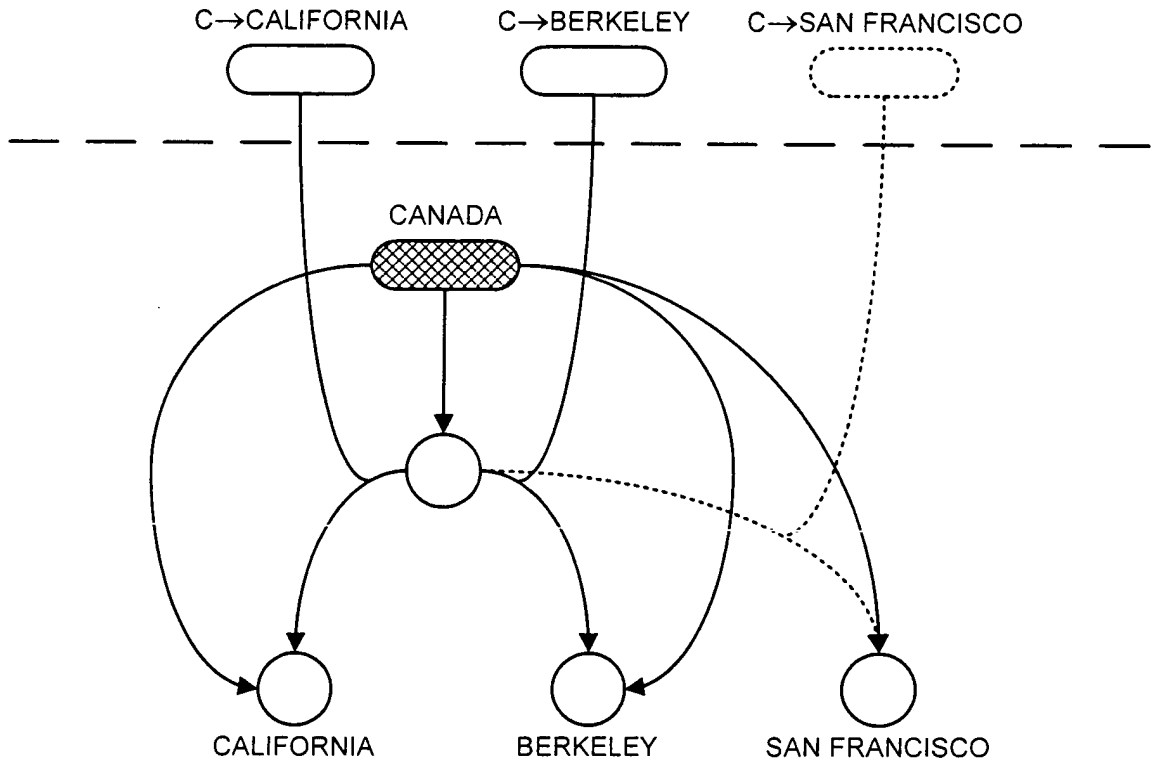
C→CALIFORNIA
C→BERKELEY
C→SAN FRANCISCO
CANADA
CALIFORNIA
BERKELEY
SAN FRANCISCO

FIG. 14

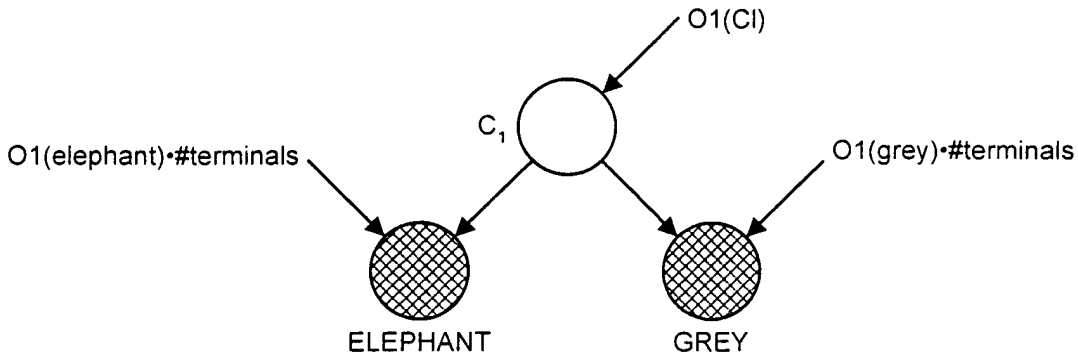

FIG. 15.1

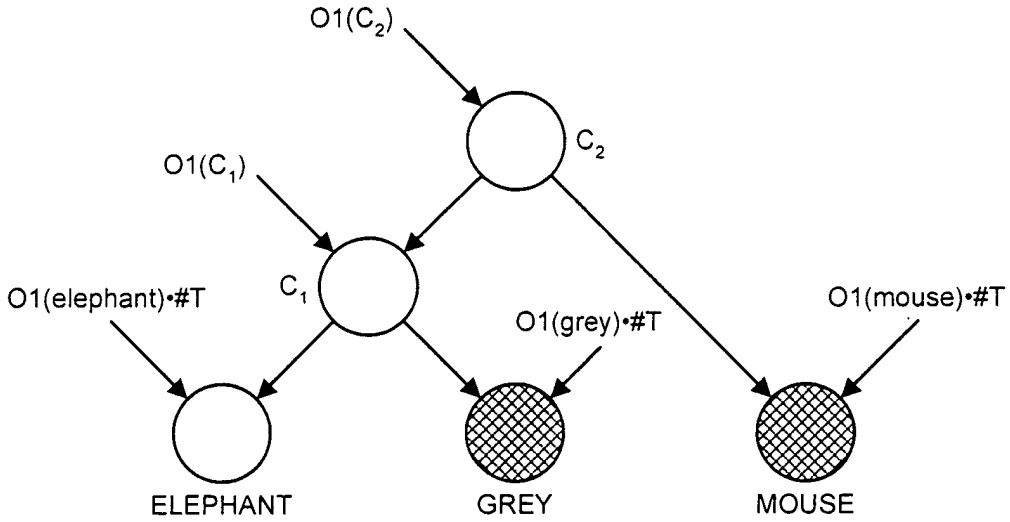

FIG. 15.2A

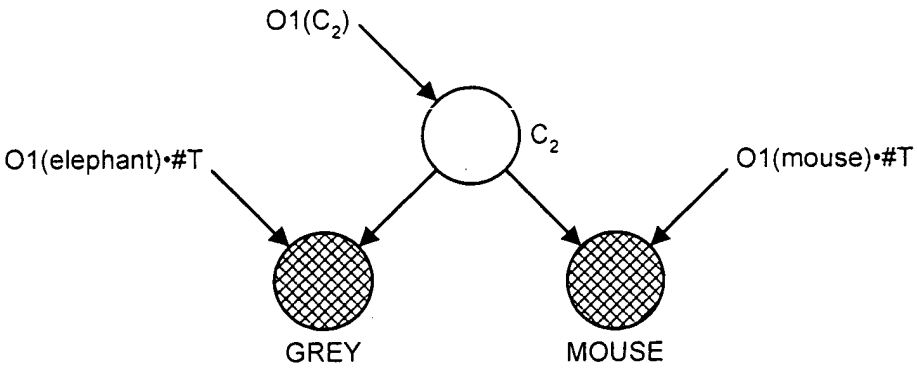

FIG. 15.2B

Current (60) Last 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 random

Phil Search

Model of 1378939 clusters

595417600 CANADA
36464964 [john david mark paul michael scott]
29024010 [free sex porn pics movies xxx]
21810398 [uk england london in-the-uk ltd friends-reunited]
17580210 [pictures of picture photos pics images]
15994938 [lyrics song lyric songs by midi]
13239308 [download exe windows-media-player microsoft winzip zip]
10754172 [and education social research studies theory]
10019350 [a the is to that you]
9922017 [nude naked pics pictures photos pamela-anderson]
9749012 [parts car cars auto performance automobile]
7980547 [jennifer lisa amy michelle sarah jessica]
7880218 [linux howto rpm mandrake freebsd redhat]
7734638 [john william james thomas george charles]
7286616 [windows-2000 server setup win2k network problem]
6892531 [the in of from history life]
6588060 [treatments side-effects medicine mayo-clinic medication hypertension]
6408187 [jobs job employment in job-search careers]
5935054 [business management marketing strategy services technology]
5827852 [university college harvard cornell stanford at]
5250601 [state california texas government florida new-york]
4999860 [crack serial warez download cracks keygen]
4788106 [history of the origin origins timeline]
4768048 [map of maps world road usa]
4738298 [lyrics discography band music official tour]
4479820 [australia sydney australian melbourne brisbane nsw]
4475140 [software free download freeware program shareware]
4377300 [real-estate realestate homes realty realtor home]
4240840 [university of michigan minnesota arizona chicago]
4224342 [javascript asp vbscript function example php]
3908765 [of in for the a what-is]
3890368 [de la en el y del]

FIG. 16

Phil: /cl?CID=4737501&iteration=60

Current (60) Last 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 random

Phil Search

PARENTS
6577887 CANADA (0.011109, inf)
CHILDREN
... 8020 children omitted ...
31907 [internships internship summer interns paid intern] (0.00499159, inf)
31907 [layoffs layoff 2001 lay-off job-cuts news] (0.00499159, inf)
31907 [developer software programmer developers development engineer] (0.00499159, inf)
31907 [network administrator engineer it support administration] (0.00499159, inf)
35253 [pharmaceutical companies pharmaceuticals pharma sales company] (0.00551656, inf)
35253 [orange-county california in southern-california ca irvine] (0.00551656, inf)
35253 [writing writers writer fiction writer's freelance] (0.00551656, inf)
35253 [volunteer international work abroad overseas volunteering] (0.00551656, inf)
35253 [sales rep representative reps representatives pharmaceutical] (0.00551656, inf)
38950 [manager director of job-description duties role] (0.00609675, inf)
38950 [for students student graduates teachers jobs] (0.00609675, inf)
38950 [in working work abroad living jobs] (0.00609675, inf)
38950 [jobs germany in it europe companies] (0.00609675, inf)
38950 [recruiters headhunters recruiter headhunter executive head-hunters] (0.00609675, inf)
43032 [business a starting-a start small-business how-to-start-a] (0.00673795, inf)
43032 [advertising agency marketing group communications ad] (0.00673795, inf)
43032 [construction building contractors industry company projects] (0.00673795, inf)
52521 [association of american associations national society] (0.00822975, inf)
52521 [alberta calgary edmonton canada red-deer city-of] (0.00822975, inf)
52521 [executive-search executive recruiters recruiting recruiter search] (0.00822975, inf)
52521 [agencies employment agency recruitment temporary employment] (0.00822975, inf)
58019 [resume resumes sample cover-letter writing samples] (0.00909528, inf)
58019 [pilot aviation pilots training flight flying] (0.00909528, inf)
64091 [atlanta georgia ga marietta marta alpharetta] (0.0100518, inf)
64091 [australia in australian australia new-zealand] (0.0100518, inf)
64091 [companies top company largest top-10 top-100] (0.0100518, inf)
64091 [temporary temp employment agency staffing services] (0.0100518, inf)
70794 [in new-york new-york-city nyc ny new-jersey] (0.011109, inf)
70794 [companies in company companys based business] (0.011109, inf)
78194 [design graphic web graphics designs studio] (0.0122773, inf)
95377 [jobs programmer job programming contract it] (0.0149956, inf)
105325 [engineering mechanical engineer engineers aerospace design] (0.0165727, inf)
105325 [career careers job carrer information advice] (0.0165727, inf)
105325 [jobs government canada federal government canadian] (0.0165727, inf)
116301 [how-to-become-a becoming-a for a career to-become-a] (0.0183156, inf)
128409 [employment opportunities employement job-opportunities emploment human-resources] (0.0202419, inf)
172725 [recruitment uk jobs london agency it] (0.0273237, inf)
190617 [salary salaries average salary-survey wages pay] (0.0301974, inf)
210332 [programs degree program education online masters] (0.0333733, inf)
378070 [in jobs for india it bangalore] (0.0608101, inf)

ID 4737501
Total Firing: 6408187.000000
Total Activation: 11139140.000000
Outlink Sum: 0.848506
Activated Outlink Sum: 0.521899
1841287 jobs (0.165299, inf) lm
410846 job (0.0368832, inf) lm
275398 employment (0.0247235, inf) lm
554585 in (0.0497871, inf) lm
167037 job-search (0.0149956, inf) lm
123744 careers (0.011109, inf) lm
75054 it (0.00673795, inf) lm
55602 career (0.00499159, inf) lm
33724 job-opportunities (0.00302755, inf) lm
33724 human-resources (0.00302755, inf) lm
24983 job-listings (0.00224287, inf) lm
22606 job-openings (0.00202943, inf) lm
24983 part-time (0.00224287, inf) lm

FIG. 17

Phil: /terminal?TERMINALID=66&iteration=60

Current (60) Last 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 random

Phil Search

TERMINAL: jobs
Firing: 3049398.000000

1841287 [jobs job employment in job-search careers] (0.165299, inf)
193885 [jobs uk in vacancies job in-the-uk] (0.165299, inf)
114955 [jobs government canada federal government canadian] (0.496585, inf)
101975 CANADA (3.04325e-05, inf)
71384 [in jobs for india it bangalore] (0.0608101, inf)
56521 [recruitment uk jobs london agency it] (0.0301974, inf)
54619 [india in indian bangalore mumbai companies] (0.0100518, inf)
35967 [teaching jobs teacher in education positions] (0.165299, inf)
32069 [jobs summer cool library alaska fun] (0.67032, inf)
29948 [jobs employment summer student ontario government] (0.182684, inf)
25768 [jobs programmer job programming contract it] (0.082085, inf)
22452 [work-at-home work-from-home at-home home jobs from-home] (0.0608101, inf)
19363 [jobs germany in it europe companies] (0.110803, inf)
18524 [international jobs development overseas asia africa] (0.40657, inf)
16560 [freelance writing jobs writers writer journalism] (0.149569, inf)
16080 [government federal us jobs goverment opm] (0.0368832, inf)
15667 [state of jobs dept michigan ohio] (0.011109, inf)
15364 [english teaching in teach japan jobs] (0.0301974, inf)
14444 [jobs television media production broadcast broadcasting] (0.548812, inf)
14107 [jobs colorado new-mexico colorado-springs state mental-health] (0.67032, inf)
13111 [jobs summer work part-time student temporary] (0.201897, inf)
12860 [ireland dublin irish in cork galway] (0.00609675, inf)
9639 [houston jobs employment houston-chronicle epidemiology houstonjobs] (0.5, inf)
9177 [hawaii jobs hawai tech federal kaiser-permanente] (0.67032, inf)

FIG. 18

Phil: /terminal?TERMINALID=3&iteration=60

Current (60) Last 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 random

Phil Search

TERMINAL: in
Firing: 22880440.000000

5567652 CANADA (0.00166156, inf)
1822563 [the in of from history life] (0.135335, inf)
1191284 [in a using how-to with to] (0.149569, inf)
838956 [of in for the a what-is] (0.082085, inf)
712471 [hotels in cheap near hostels london] (0.301194, inf)
554585 [jobs job employment in job-search careers] (0.0497871, inf)
550830 [in universities education colleges courses usa] (0.122456, inf)
446031 [india in indian bangalore mumbai companies] (0.082085, inf)
438108 [in girls thongs bikinis women teens] (0.332871, inf)
350253 [in new-york new-york-city nyc ny new-jersey] (0.301194, inf)
304518 [stores store in retail shops online] (0.100259, inf)
279085 [in of companies usa directory list] (0.135335, inf)
264904 [the of in and role women] (0.110803, inf)
241372 [in shops uk london shop england] (0.165299, inf)
239862 [embassy in us american british usa] (0.082085, inf)
210098 [canada canadian in ontario toronto quebec] (0.135335, inf)
207795 [for-sale property houses in estate-agents properties] (0.100259, inf)
200767 [apartments apartment in rentals for-rent rent] (0.0672055, inf)
199096 [australia in australian sydney australia new-zealand] (0.182684, inf)
194042 [in jobs for india it bangalore] (0.165299, inf)
172192 [in africa south-africa aids african poverty] (0.246597, inf)
167666 [in the where-is is what what-is] (0.110803, inf)
166474 [for-sale homes in houses land condos] (0.149569, inf)
155791 [education in schools school children elementary] (0.135335, inf)
130449 [in the shower on a bed] (0.201897, inf)
125241 [restaurants in resturants restuarants dining best] (0.110803, inf)
124782 [in c c++ string function strings] (0.100259, inf)
120925 [food culture in people foods traditional] (0.0608101, inf)
119587 [india in of indian on india's] (0.100259, inf)
118897 [code in program for c c++] (0.082085, inf)
113873 [in new-england massachusetts new-hampshire connecticut maine] (0.165299, inf)
109394 [club clubs in bar bars nightclub] (0.0497871, inf)
103115 [statistics in population united-states us percentage] (0.0608101, inf)
96280 [jobs uk in vacancies job in-the-uk] (0.082085, inf)
93810 [accommodation accomodation in bed-and-breakfast b&b accomadation] (0.0742736, inf)
85136 [laws law in for on legal] (0.0742736, inf)
83956 [in pain and on back with] (0.090718, inf)
83808 [in things-to-do-in activities attractions things-to-do fun] (0.301194, inf)
81116 [in events london 2001 2002 may] (0.100259, inf)
80008 [in places places-to-visit visit places-to-go sites] (0.22313, inf)
79652 [underwear men in briefs speedos boys] (0.110803, inf)

FIG. 19

Phil: /search?iteration=60&q=palo+alto+restaurants&btnG=Phil+Search

Current (60) Last 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 random

palo alto restaurants

Phil Search

QUERY: palo alto restaurants
palo-alto 15.262480/12747397/9.978931 [CANADA]
restaurants 14.108328/3.750645/8.187777 [CANADA]

network description: -19.019948
Session graph: 8 nodes; 16 edges; 4 segment: 0.000080 secs setup: 0.001456 secs
0.746516 0.746516 0.593943 [restaurants in resturants restuarants dining best]
0.682912 0.682912 0.390506 [san-jose ca sunnyvale santa-clara bay-area mountain-view]
0.374688 0.374688 0.203739 [palo-alto menlo-park restaurant evvia palo straights-cafe]
0.253490 0.253490 0.067851 [restaurant san-francisco restaurants bacar gary-danko boulevard]
1.000000 2.000000 0.065285 CANADA
0.031717 0.031717 0.001060 [california ca bay-area san-jose san-francisco oakland]
Query matched 8 clusters

Considered 6 clusters in 0.000313 seconds. Iterations: 9

Detailed Iteration Graphs

gif: 0 1 2 3 ALL
ps: 0 1 2 3 ALL

FIG. 20

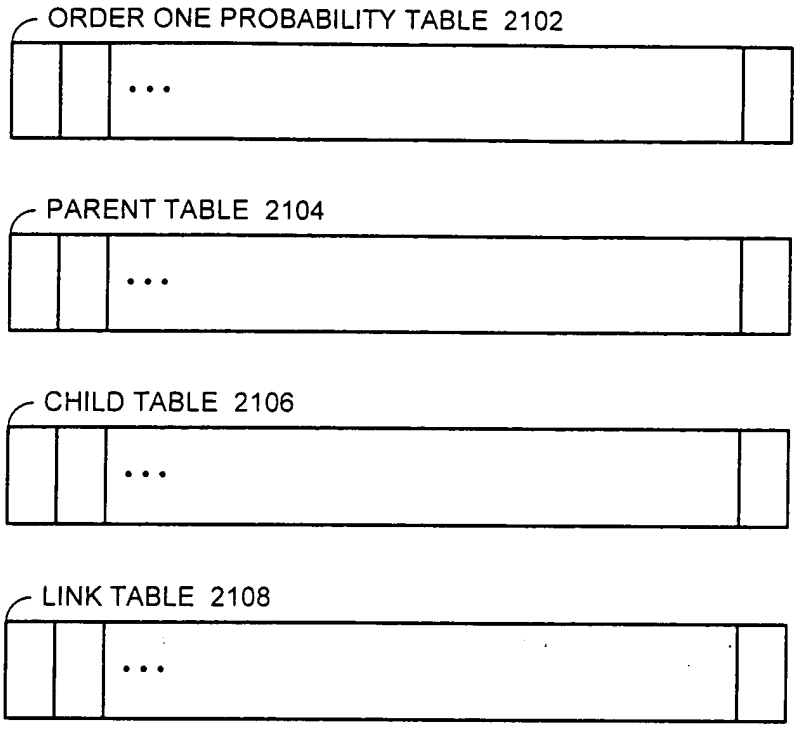
ORDER ONE PROBABILITY TABLE 2102
PARENT TABLE 2104
CHILD TABLE 2106
LINK TABLE 2108

FIG. 21

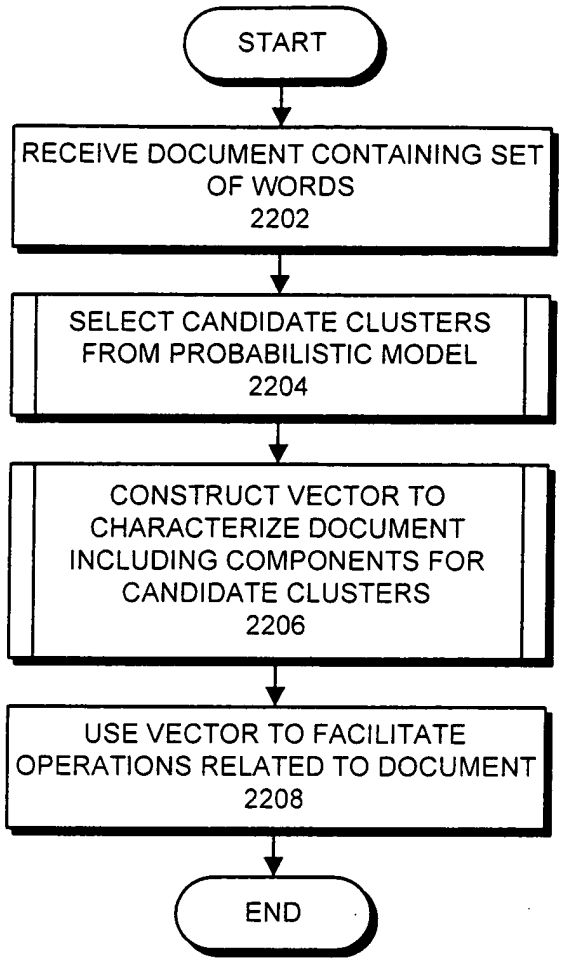
START
RECEIVE DOCUMENT CONTAINING SET OF WORDS
2202
SELECT CANDIDATE CLUSTERS FROM PROBABILISTIC MODEL
2204
CONSTRUCT VECTOR TO CHARACTERIZE DOCUMENT INCLUDING COMPONENTS FOR CANDIDATE CLUSTERS
2206
USE VECTOR TO FACILITATE OPERATIONS RELATED TO DOCUMENT
2208
END

FIG. 22

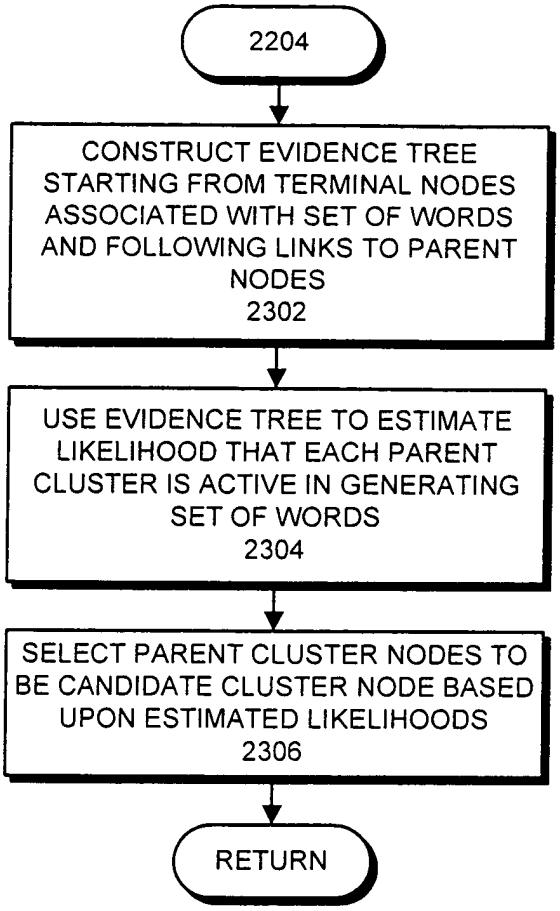
2204
CONSTRUCT EVIDENCE TREE STARTING FROM TERMINAL NODES ASSOCIATED WITH SET OF WORDS AND FOLLOWING LINKS TO PARENT NODES
2302
USE EVIDENCE TREE TO ESTIMATE LIKELIHOOD THAT EACH PARENT CLUSTER IS ACTIVE IN GENERATING SET OF WORDS
2304
SELECT PARENT CLUSTER NODES TO BE CANDIDATE CLUSTER NODE BASED UPON ESTIMATED LIKELIHOODS
2306
RETURN

FIG. 23

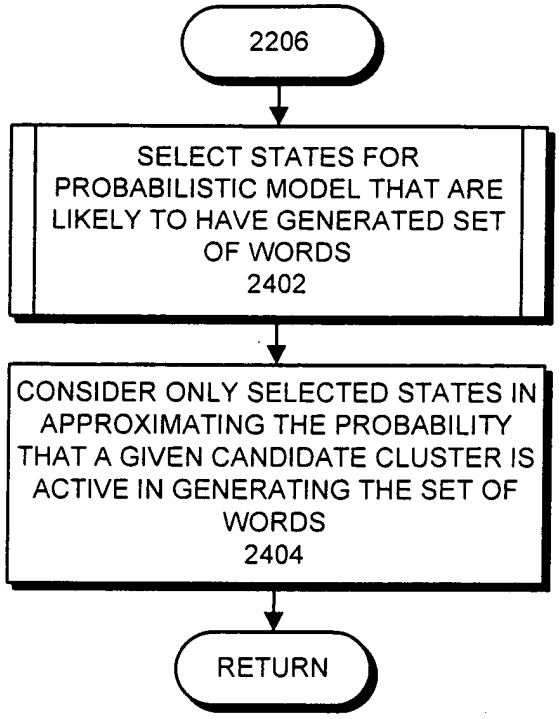
2206
SELECT STATES FOR PROBABILISTIC MODEL THAT ARE LIKELY TO HAVE GENERATED SET OF WORDS
2402
CONSIDER ONLY SELECTED STATES IN APPROXIMATING THE PROBABILITY THAT A GIVEN CANDIDATE CLUSTER IS ACTIVE IN GENERATING THE SET OF WORDS
2404
RETURN

FIG. 24

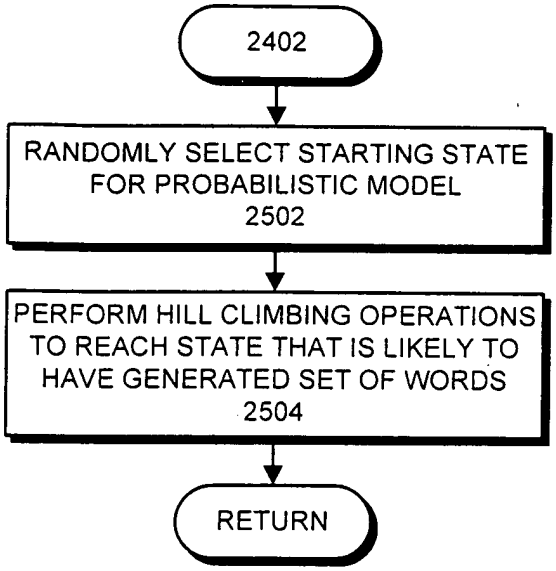
2402
RANDOMLY SELECT STARTING STATE FOR PROBABILISTIC MODEL
2502
PERFORM HILL CLIMBING OPERATIONS TO REACH STATE THAT IS LIKELY TO HAVE GENERATED SET OF WORDS
2504
RETURN

FIG. 25

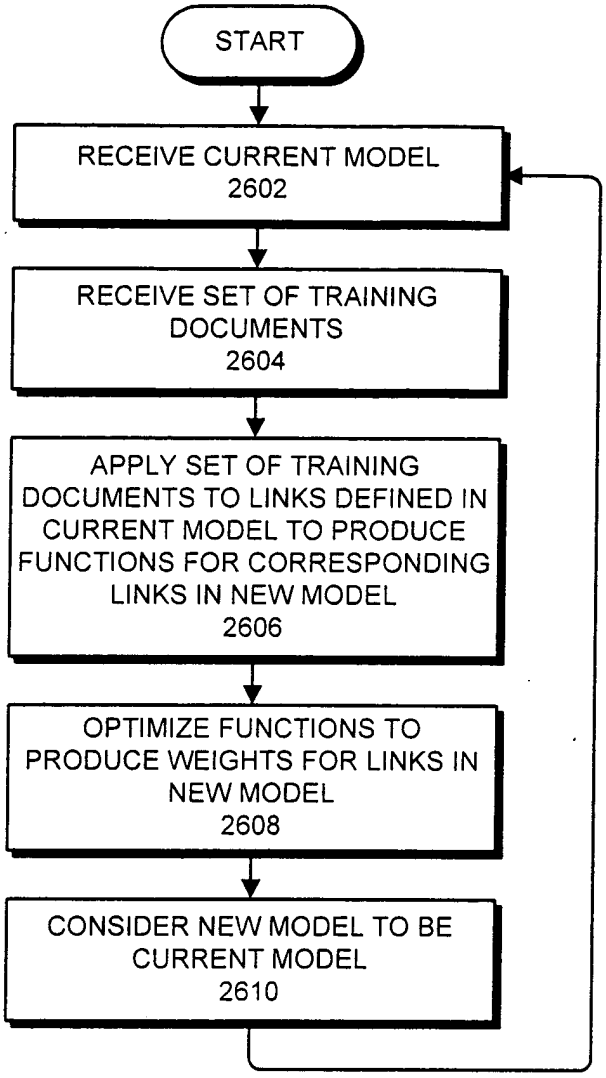
START
RECEIVE CURRENT MODEL
2602
RECEIVE SET OF TRAINING DOCUMENTS
2604
APPLY SET OF TRAINING DOCUMENTS TO LINKS DEFINED IN CURRENT MODEL TO PRODUCE FUNCTIONS FOR CORRESPONDING LINKS IN NEW MODEL
2606
OPTIMIZE FUNCTIONS TO PRODUCE WEIGHTS FOR LINKS IN NEW MODEL
2608
CONSIDER NEW MODEL TO BE CURRENT MODEL
2610

FIG. 26